

Work Order ID 153522

Monday, November 21, 2016 9:24:01 AM

153522

Page 1

Item ID: D4895-045

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fwd Outboard Beam Assembly

Start Date: 11/10/2016 Start Qty: 1.00

1

Cust Item ID:

Required Date: 11/22/2016 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

DAS
21
9-89

Date:

NOV 21 2016

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D4895

B

100

0.00

100

Waterjet

Memo

0.09

FLOW CNC Waterjet

CUT BLANK AS PER FILE D4895-5_BLANK

(i)

2-16/11/21

110

0.00

110

HAAS 4

Memo

0.28

HAAS CNC vertical machine #4

MILL AS PER FOLIO FB331 AND DWG D4895

FOLIO REV: AADWG REV: B

DEBURR

1

2-16/11/21

DAS
33
9-89

17/12/0

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Description Work Order Deviation		Disposition			

Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

153522

Monday, November 21, 2016 9:24:02 AM

N900040100

Setup Start *NS1*

Stop *NS2*

1

Cust Item ID:

Start Date: 11/10/2016 **Start Qty:** 1.00

Required Date: 11/22/2016 **Req'd Qty:** 1.00

*** 1 ***

Customer:

Reference:

Run Start *NR1*

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop *NR2*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Accept Qty	Reject Qty	Reject Number	Insp. Stamp
---------------	---------------	------------------	----------------

120 QC2- Inspect parts off machine FAI/FAIB

0.00

120

0.00

QC

Memo

Quality Control

DAS

33

0.80

9-89

17/01/08

150 QC8- Inspect parts - second check

0.00

150

0.00

QC

Memo

Quality Control

DAS

08

0.00

9-39

160 Chemical Conversion Coat per QSI005 4.1

0.00

160

0.06

HandFinish

Memo

Hand Finishing

(X1) ~~8~~ 2017/01/11
BEB

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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OTHER : ☐																									

153522

Monday, November 21, 2016 9:24:02 AM

N900040100

Setup Start *NS1*

Stop *NS2*

Cust Item ID:

Start Date: 11/10/2016 **Start Qty:** 1.00 ***1***

Required Date: 11/22/2016 **Req'd Qty:** 1.00 ***1***

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

**Insp.
Stamp**

0.00

170

OC

Memo

0.00

Quality Control

0.00

171

Powdercoat

Memo

0.02

Powder Coating

MASK HOLES AS PER NOTE 8

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

172

OC

Memo

0.00

Quality Control

38

1A 18 2317

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Monday, November 21, 2016 9:24:02 AM

Item ID: D4895-045

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Fwd Outboard Beam Assembly

Stop

NS2

Start Date: 11/10/2016 **Start Qty:** 1.00

1

Cust Item ID:

Required Date: 11/22/2016 **Req'd Qty:** 1.00

1

Customer:

Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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180

0.00

180

0.01

Small Fab

Memo

Small Fab

PRESS FIT BUSHING AS PER DWG

190

0.00

190

0.00

QC

Memo

Quality Control

QC5- Inspect part completeness to step on W/O

Identify as per dwg & Stock Location: 57978 0.00

0.00

200

200

0.00

Packaging

Packaging

Memo

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Work Order ID 153522

Monday, November 21, 2016 9:24:02 AM

153522

Page 5

Item ID: D4895-045 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Fwd Outboard Beam Assembly
Start Date: 11/10/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 11/22/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC21- Final Inspection - Work Order Release	0.00					DAS 21 9-89	JAN 25 2017	
210									
QC	Memo	0.02							
Quality Control									

MF
17-1-24

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%; border: none;"> <tr> <td style="width:12.5%;">Skid-tube ☐</td> <td style="width:12.5%;">Cross tube ☐</td> <td style="width:12.5%;">Water Jet ☐</td> <td style="width:12.5%;">Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
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Misidentified ☐	Past Due ☐																								

Picklist Print

Monday, November 21, 2016 9:24:01 AM

Page 1

Work Order ID: 153522

153522

Parent Item: D4895-045

D4895-045

Parent Item Name: Fwd Outboard Beam Assembly

Start Date: 11/10/2016

Required Date: 11/22/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 14.07.25 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4859-1		Manufactured	No				Each	38.0000		4			

D4859-1

Bushing

DAS
30
9-89

JAN 18 2017

Location	Loc Qty	Loc Code
ST130	38	
124826	1	
145758	12	
147406	25	

M6061T6B1.000X12.00
0

Purchased No

f 17.0000

3.168421

M6061T6B1 000X12 000

6061-T6 Bar 1.00 x 12.00

Dec 16/11/20

Location	Loc Qty	Loc Code
MAT	17	
m133265	15	
m134705	2	

3

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

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			Completed By																																																																		
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OTHER :																																																																					

DART AEROSPACE LTD		Work Order:	153522
Description: Fwd Outboard Beam		Part Number:	D4895-5
Inspection Dwg: D4895	Rev: B	Page 1 of 1	

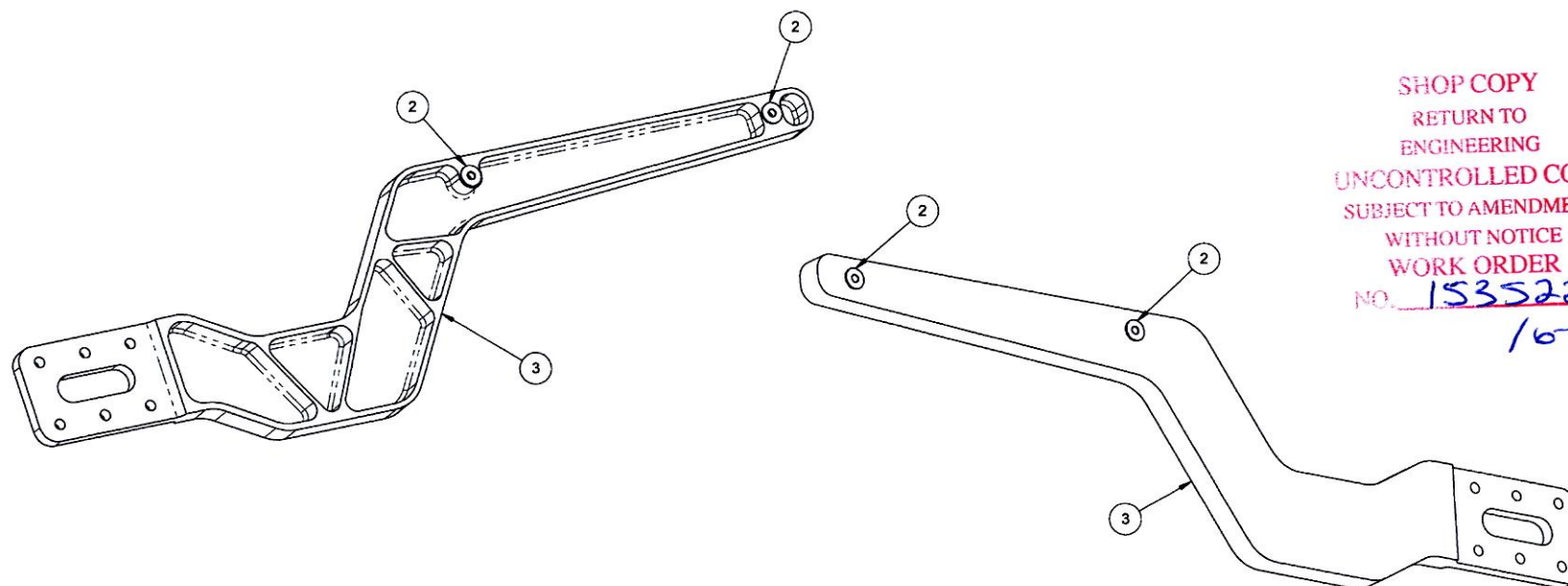
FIRST ARTICLE INSPECTION CHECKLIST

	Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
CNC Milling	32.55	+/-0.030	32.55	✓		MJP-07	Tape
	R0.38	+/-0.030	0.300	✓			Radius gauge
	0.85	+/-0.030	0.854	✓		MJP-04	✓
	0.93	+/-0.030	0.908	✓			
	8.32	+/-0.030	8.315	✓			
	Ø0.425	+0.000/-0.002	0.424	✓			
	0.750	+/-0.010	0.751	✓			
	0.200	+/-0.010	0.195	✓			
	R0.43	+/-0.030	0.430	✓			
	3.00	+/-0.030	3.000	✓			
	3.50	+/-0.030	3.500	✓			
	0.15	+/-0.030	0.147	✓			
	0.250	+/-0.010	0.250	✓			
	5.75	+/-0.030	5.750	✓			
	1.34	+/-0.030	1.340	✓			
	1.00	+/-0.030	0.992	✓			
	R0.13	+/-0.030	0.130	✓			
	0.150	+/-0.010	0.154	✓			
	1.15	+/-0.030	1.149	✓			
	3.00	+/-0.030	3.000	✓			
	Ø0.377	+0.006/-0.001	0.380	✓			
	3.50	+/-0.030	3.500	✓			
	1.75	+/-0.030	1.750	✓			
	3.600	+/-0.005	3.600	✓			
	1.800	+/-0.005	1.802	✓			
	0.80	+/-0.030	0.797	✓			
	0.60	+/-0.030	0.600	✓			
	2.300	+/-0.005	2.300	✓			
	Ø1.00	+/-0.030	1.000	✓			
Manual Mill	0.25	+/-0.030	0.246	✓			
	5.50	+/-0.030	5.500	✓			
	12.000	+/-0.005	12.000	✓			
	1.55	+/-0.030	1.550	✓			
	Ø0.465 X 90°	+/-0.010 x 0.5°	0.475 x 90°	✓			
	R0.25	+/-0.030	0.250	✓			
	0.500	+/-0.010	0.502	✓			

Measured by:	33 9-89	Audited by:	DAS 08	Preliminary Approval:	
Date:	17/01/02	Date:	17-01-109-89	Date:	

Rev	Date	Change	Revised By	Approved
A	14.08.05	New Issue	KJ	

ITEM	QTY -045	P/N	DESCRIPTION
1	X	D4895-045	FWD OUTBOARD BEAM ASSY
2	4	D4859-1	BUSHING
3	1	D4895-5	FWD OUTBOARD BEAM



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WITHOUT NOTICE
WORK ORDER
NO. 153522 MJS
16-11-21

D4895-045 FWD OUTBOARD BEAM ASSY

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2014-07-24
mf

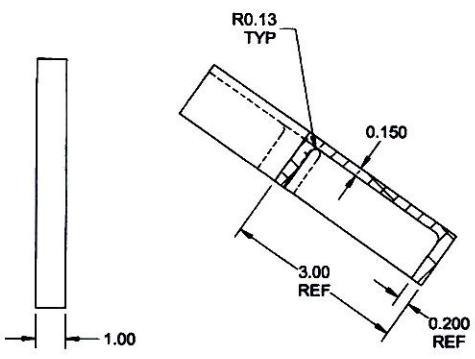
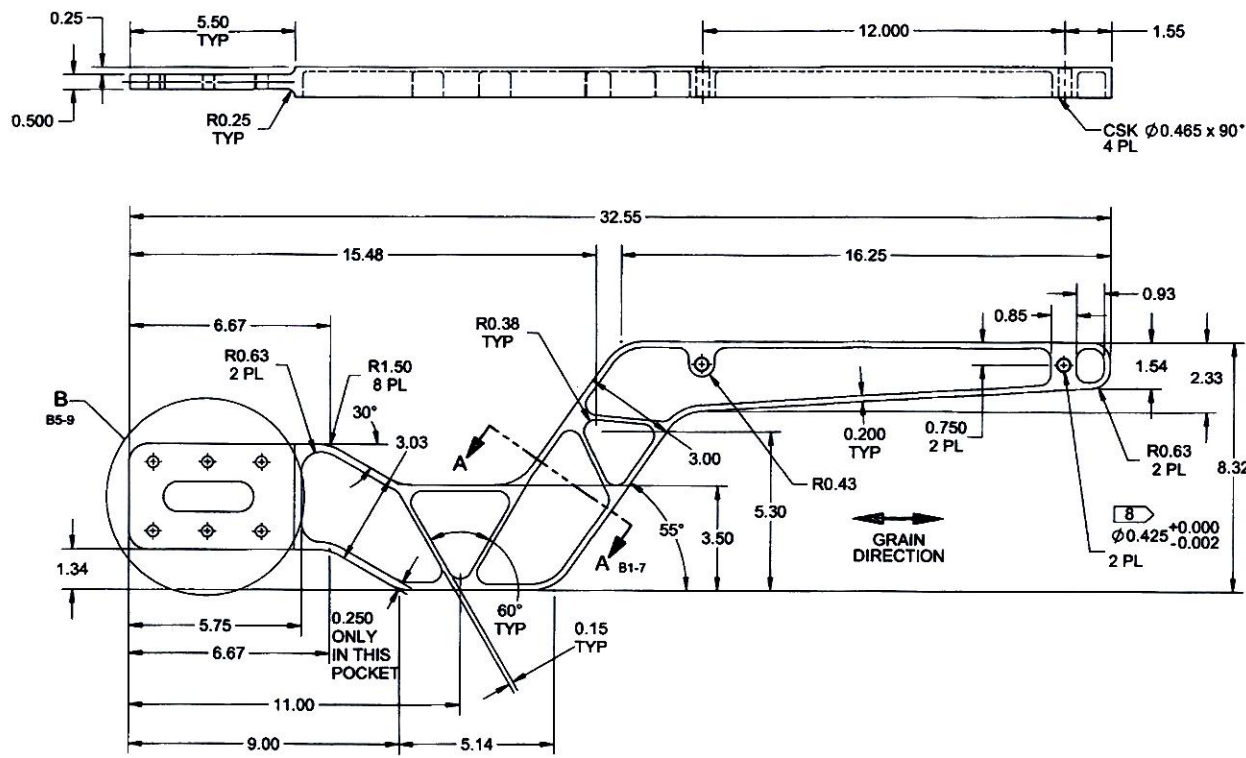
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 3.50 lbs
- 8) PRESS FIT D4859-1 INTO D4895-5. IT IS ACCEPTABLE USE MAGNABOND ADHESIVE, REMOVE EXCESS ADHESIVE FROM BUSHING HOLE

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	VS	DRAWING NO. D4895	REV. B
MFG. APPR.	JLM	SHEET 3 OF 9	
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	OUTBOARD BEAM	NTS
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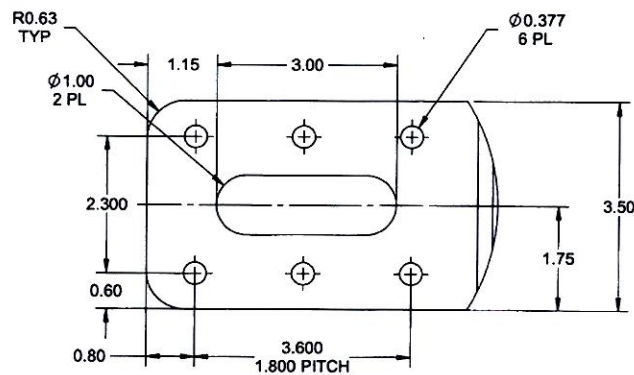
D4895-5 FWD OUTBOARD BEAM

RELEASED
2014-07-24
mp

- NOTES:**
- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR
PER QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)
OR ASTM B211 OR ASTM B221
REF DART SPEC M6061T6B
 - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 3.44 lbs
 - 8) MASK HOLES PRIOR TO POWDER COAT
 - 9) UNDEFINED FEATURES CONTROLLED BY CAD FILE D4895-5.SLDPRT

APPROVED	DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
	DRAWN	RF		
	CHECKED	VS	DRAWING NO. D4895	REV. B
	MFG. APPR.	JLM	SHEET 7 OF 9	
	APPROVED	HS	SCALE NTS	
	DE APPR.	DS	TITLE OUTBOARD BEAM	
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8 7 6 5 4 3 2 1



DETAIL B C8-5
C8-6
C8-7
C8-8

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	CHECKED	VS	DRAWING NO.	REV. B
	MFG. APPR.	JLM	D4895	SHEET 9 OF 9
	APPROVED	HS	TITLE	SCALE
	DE APPR.	DS	OUTBOARD BEAM	NTS
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